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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,227	07/11/2003	Minoru Hasegawa	1082.1060	2346

21171 7590 10/19/2006

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EXAMINER

HODGES, MATTHEW P

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/617,227

Applicant(s)

HASEGAWA ET AL.

Examiner

Matt P. Hodges

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-8,10-13 and 15-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-8,10-13 and 15-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/16/2006.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The Amendment, filed on 7/7/2006, has been entered and acknowledged by the Examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-7, 10-13, 15-17, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Busio et al. (US 2001/0005115 A1).

Regarding claims 1-3, 10, Busio discloses (see figure 1b) a color gas discharge panel including a rear substrate (7), barrier ribs (10), a phosphor layer (R, G, B), a front substrate (1) formed opposite the rear substrate and including in order, electrodes (3 and 4), an organic polymer first dielectric layer (5), an inorganic second dielectric layer (33), and a protection layer (6) of MgO. (Paragraph 21). Further the first dielectric layer is polysiloxane including a side chain of alkyl groups. (Paragraphs 0024-0030). The second dielectric layer between the organic dielectric layer and the protection layer is composed of a layer made of ZrO₂ formed to block UV radiation from damaging the first dielectric layer and device. (Paragraph 0032).

Regarding claims 11-13 and 19, Busio discloses the device as claimed (see rejection of claims 1-3 and 10 above).

Further the limitation of that “the organic dielectric layer and the inorganic dielectric layer are formed together as a laminate” is drawn to a process of manufacturing which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Further regarding the limitation that the MgO layer is formed from an organic compound layer, it is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight. Specifically, the end product does not contain an organic compound (as it is burnt off by firing) thus the limitations drawn to the inclusion of an organic compound in the MgO layer have not been given patentable weight.

Regarding claims 5 and 15, the ZrO_2 layer has a smaller bond distance between an oxygen atom and a Zr atom than the wavelength of an atom vacuum ultra violet ray. (Paragraph 0032).

Regarding claims 6 and 16, the dielectric constant of ZrO_2 (>10) is greater than that of organic dielectric layer.

Regarding claims 7 and 17, Busio further discloses the widths of the first and second dielectric layers being $10\text{ }\mu\text{m}$ and $1\text{ }\mu\text{m}$ respectively. (Paragraphs 0030 and 0032).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-8, 10-13 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aoki et al. (US 2003/0038599) in view of Busio et al. (US 2001/0005115 A1).

Regarding claims 1-3 and 10, Aoki discloses (see figure 1) a gas discharge panel including a rear substrate (21), barrier ribs (24), a phosphor layer (25), a front substrate (11) formed opposite the rear substrate, electrodes (12 and 13), a first dielectric layer (14), and a protection layer (15) of MgO. (Page 2 paragraph 34). Further the first dielectric layer is polysiloxane including a side chain of alkyl groups. (Page 2 paragraph 44) (Page 3 paragraphs 55 and 62). Aoki does not appear to disclose the use of a second dielectric layer between the organic first dielectric layer and the protection layer, however Busio, in the same field of endeavor, discloses the use of a thin inorganic dielectric layer made of ZrO_2 formed between the protection layer and the first dielectric layer. (Paragraph 0032). This second dielectric layer advantageously prevents degradation of the first dielectric layer by blocking UV radiation. Thus, it would have been obvious at the time the invention was made to a person having ordinary skills in the art to incorporate an inorganic second dielectric layer as taught by Busio into the gas discharge panel as disclosed by Aoki in order to advantageously prevent degradation of the first dielectric layer by blocking UV radiation.

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Regarding claims 11-13 and 19, Aoki in view of Busio discloses the device as claimed (see rejection of claims 1-3 and 10 above). Further the limitation of that “the organic dielectric layer and the inorganic dielectric layer are formed together as a laminate” is drawn to a process of manufacturing which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation.

Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113).

Further regarding the limitation that the MgO layer is formed from an organic compound layer, it is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight. Specifically, the end product does not contain an organic compound (as it is burnt off by firing) thus the limitations drawn to the inclusion of an organic compound in the MgO layer have not been given patentable weight.

Regarding claims 5 and 15, the second dielectric layer of ZrO_2 has a bond distance that is smaller than the wavelength of an atom vacuum ultra violet array.

Regarding claims 6 and 16, the dielectric constant of polysiloxane is less than 3 while the dielectric constant of ZrO_2 is much greater than 10.

Regarding claims 7 and 17, the organic dielectric layer has a thickness of $15\text{ }\mu\text{m}$ (Page 2 paragraph 41) while the inorganic layer is $1\text{ }\mu\text{m}$ (Paragraph 0032).

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Regarding claims 8 and 18, the protective layer is 1 μm thick and is further formed from methods including sputtering and vapor deposition. The use of vapor deposition would lead to a porous body on the surface of the second dielectric layer. (Paragraphs 0071 and 0138)

Response to Arguments

Applicant's arguments filed 7/7/2006 have been fully considered but they are not persuasive.

Regarding applicant's assertion that the sol-gel technique used in Busio must be fired and as such does not include organic elements, the examiner respectfully disagrees. Busio discloses one suggested manufacture, where the temperature is not raised above 400°. (Paragraph 0030). Further Busio clearly states that Alkyl groups remain in the final product to enhance flexibility and reduce cracking. This is further supported by the inclusion of a radiation-blocking layer to help prevent damage to the sol-gel dielectric layer. (Paragraphs 0030 and 0032).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period

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will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matt P Hodges whose telephone number is (571) 272-2454. The examiner can normally be reached on 7:30 AM to 4:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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